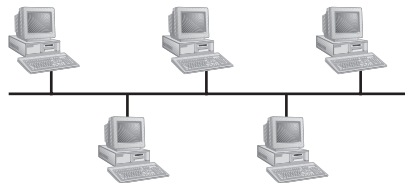


# NETWORK+ PRACTICE EXAM

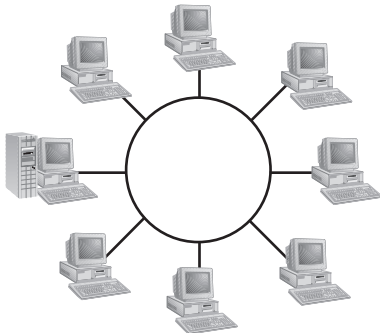
**T**he following exam contains questions similar in content and format to what you will encounter on CompTIA's Network+ certification exam. The exam consists of 65 questions, all of which are multiple choice. Some questions have more than one answer, and some questions require that you study a figure in order to determine the right answer. The questions are in no particular order. The number of questions on each topic reflects the weighting that CompTIA assigned to these topics in their January, 2002 exam objectives. If you want to simulate taking the CompTIA Network+ certification exam, you should allow yourself 90 minutes to answer all of the questions.

1. What TCP/IP utility would you use to determine the number of hops between two routers?
  - a. FTP
  - b. Nslookup
  - c. NBTSTAT
  - d. Tracert
  - e. Telnet
2. You are the network administrator for a NetWare 5.0 network that runs the TCP/IP protocol. A new user in your organization can log onto the network, but cannot retrieve her spreadsheet files from the network. Which two of the following situations could be the cause of her problem?
  - a. She has entered the wrong login ID or password.
  - b. She does not have permission to read files in the directory where the spreadsheets are stored.
  - c. Her network cable is not inserted into her workstation's NIC.
  - d. She does not have permission to view files on the volume where the spreadsheets are stored.
  - e. The DHCP settings in her workstation's TCP/IP configuration are incorrect.

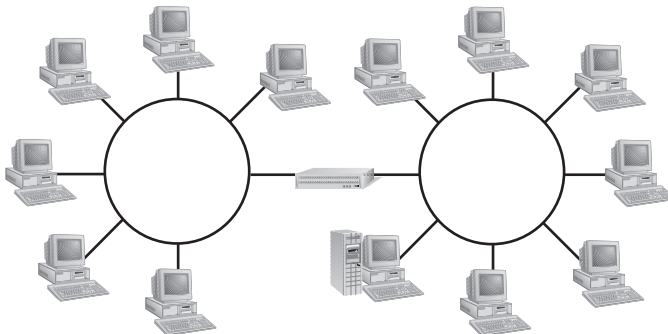
3. Which of the following figures reflects the type of physical topology commonly used on a 100BaseTX network?



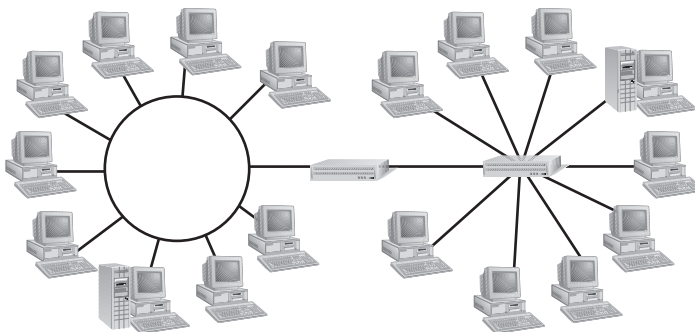
a.



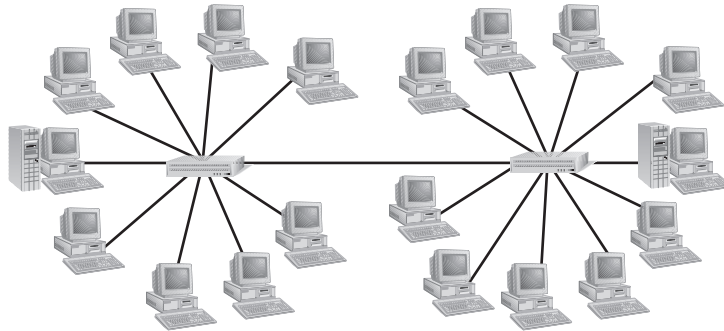
b.



c.



d.

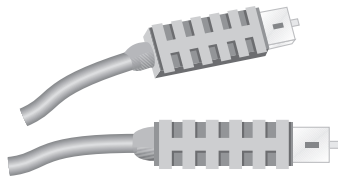


e.

4. When the URL of a Web page begins with “https://,” what type of security can you assume the Web page employs for receiving and transmitting data to and from the Web server?
  - a. Kerberos
  - b. SSL
  - c. IPSec
  - d. L2TP
  - e. Packet filtering firewall
5. You are a support technician for an Internet service provider (ISP) called Alpha Enterprises. A brand new customer calls to ask why his dial-up connection to your company’s RADIUS access server won’t work. After the user double-clicks the ISP dial-up networking connection icon on his Windows 98 desktop, you can hear his modem dialing. And even though another machine seems to answer, his connection never gets established. You verify that his phone line is connected properly and that he has entered the correct phone number. You also make sure he is using the correct, case-sensitive user name and password that he just received from your Customer Service Department. What do you ask him to check next in order to get closer to solving his problem?
  - a. the type of server specified in his Alpha Enterprises Properties dialog box
  - b. the version of Windows 98 his system uses
  - c. whether the “Save Password” box is checked in his Connect to Alpha Enterprises dialog box
  - d. whether he has disabled the call waiting feature in his Alpha Enterprises Properties dialog box
  - e. the maximum baud rate his modem can handle

6. Which of the following protocols is not routable?
  - a. NetBIOS
  - b. NetBEUI
  - c. TCP/IP
  - d. IPX/SPX
  - e. AppleTalk
7. Which layer of the OSI Model contains the Logical Link and MAC sublayers?
  - a. Physical layer
  - b. Data Link layer
  - c. Network layer
  - d. Transport layer
  - e. Session layer
8. You are a networking technician in a radiology clinic, where physicians use the network to transmit and store patients' diagnostic results. Shortly after a new wing, which contains X-ray and magnetic resonance imaging (MRI) machines, is added to the building, computers in that area begin having intermittent problems saving data to the file server. Once you have identified the symptoms, what are your second and third steps in troubleshooting this problem?
  - a. Determine the number of workstations affected, which segment the affected workstations belong to, and which area of workstations is affected.
  - b. Verify the soundness of both the physical connections and client software configurations for each workstation having a problem.
  - c. Research the problem on your NOS vendor's technical support Web site.
  - d. Identify recent changes to the network in order to determine whether a hardware or software change may be responsible for the problem.
  - e. Identify the potential effects of the solution you are about to apply, to make sure that you do not inadvertently create new problems.
9. Which two of the following media are capable of providing the foundation for a Fast Ethernet network?
  - a. RG-8 coaxial cable
  - b. RG-58A/U coaxial cable
  - c. CAT5 UTP
  - d. CAT1 UTP
  - e. fiber-optic cable

10. In which of the following situations would a crossover cable be useful for troubleshooting a network connectivity problem with a workstation?
- a. to connect the workstation to a hub
  - b. to connect the workstation's hub port to a punch down block
  - c. to connect the workstation to another workstation
  - d. to connect the workstation's switch port to its hub port
  - e. to connect between the workstation's wall plate and its hub port
11. Which of the following WAN topologies is the most fault-tolerant?
- a. full mesh
  - b. mesh
  - c. peer-to-peer
  - d. ring
  - e. hierarchical
12. Which of the following is a valid MAC address?
- a. C3000000FFFF
  - b. 111.111.111.111
  - c. ::9F53
  - d. AEEFG0930110
  - e. D0000000
13. What type of network uses the type of connector shown below?

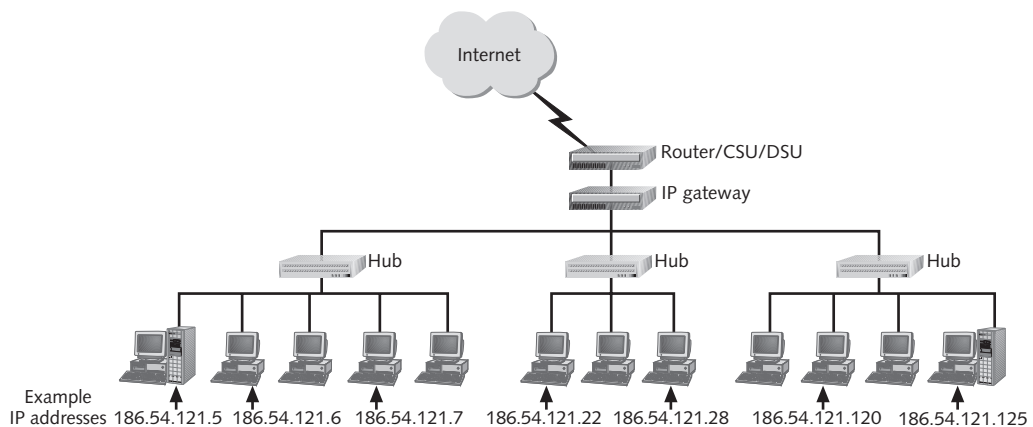


- a. 100BaseFX
- b. 100BaseTX
- c. 100BaseVG-AnyLAN
- d. 10BaseT
- e. 10Base2

14. Your organization has just ordered its first T-1 connection to the Internet. Prior to that, your organization was relying on a DSL connection. Which of the following devices must you now have that your DSL connection didn't require?
  - a. modem
  - b. CSU/DSU
  - c. switch
  - d. hub
  - e. MAU
15. What type of addresses do bridges read, and to what layer of the OSI Model do bridges belong?
  - a. IP addresses; the Network layer
  - b. IP addresses; the Transport layer
  - c. MAC addresses; the Network layer
  - d. MAC addresses; the Data Link layer
  - e. IP addresses; the Data Link layer
16. You have been asked to provide a connectivity solution for a small, locally owned franchise of a national restaurant chain. The owners of the franchise would like to send their confidential sales figures, personnel information, and inventory updates to the national office, which is 1200 miles away, once per week. Their total monthly data transfer will amount to almost 50 megabytes. The franchise owners do not plan to use the connection for any other purposes, and they do not have any IT staff to support the connection. Also, they do not want to spend more than \$75 per month nor more than \$500 to install their connection. Considering cost, speed, reliability, technical expertise, distance, security, and the nature of their environment, what is the best solution for this client?
  - a. a T1 that connects to the national office via a router at the local franchise and a router at the national office and uses IPSec to ensure the security of the data en route
  - b. a PSTN connection to a local Internet service provider that uses PPP to dial into an access server, then sends data via e-mail to the national office
  - c. a DSL connection to a local telephone and Internet service provider that uses IPSec to encrypt the data before it is sent to the national office's file server over the Internet
  - d. a private SONET ring to connect with two local telephone and Internet service providers that connects to the national office's T3 and sends data via TCP/IP over ATM
  - e. an ISDN connection to a local Internet service provider that allows you to copy files to the national office's anonymous FTP site

17. IEEE's Physical layer standards for wireless networking are established by which IEEE committee?
- a. 802.3
  - b. 802.5
  - c. 802.11
  - d. 802.3au
  - e. 802.5w
18. You are a software programmer using a development Web server at your office to test your programs. Although your Web server is connected to the Internet for test purposes, you want to ensure that no one on the Internet can access your Web files. In order to make it more difficult for someone to connect to your Web server from the Internet, which TCP/IP default port number would you change in your Web server software configuration?
- a. 21
  - b. 22
  - c. 65
  - d. 80
  - e. 90
19. What is the maximum segment length on a 10BaseT network?
- a. 85 meters
  - b. 100 meters
  - c. 185 meters
  - d. 200 meters
  - e. 1000 meters
20. You are the network administrator for a large college whose network contains nearly 10,000 workstations, over 200 routers, 80 switches, and 2000 printers. You are researching a proposal to both upgrade the routers and switches on your network and at the same time improve the management of your network. What type of protocol should you ensure that the new routers and switches can accept in order to more easily automate your network management?
- a. TFTP
  - b. SMTP
  - c. NNTP
  - d. ICMP
  - e. SNMP

21. Frame Relay is a WAN technology that relies on which one of the following media?
- a. twisted pair
  - b. coaxial cable
  - c. fiber-optic cable
  - d. infrared
  - e. radio frequency
22. What is the most likely logical address of the IP gateway in the drawing shown below?



- a. 186.54.121.0
  - b. 186.54.121.1
  - c. 186.54.121.121
  - d. 186.54.121.123
  - e. 186.54.121.255
23. Which two of the following is critical to a successful disaster recovery plan?
- a. records detailing network topology and equipment, vendor support numbers, and key networking personnel
  - b. regular backups of the file server data and configurations
  - c. a third-party assessment of disaster recovery readiness
  - d. multiple connections to an Internet service provider
  - e. insurance for the physical plant and building structure



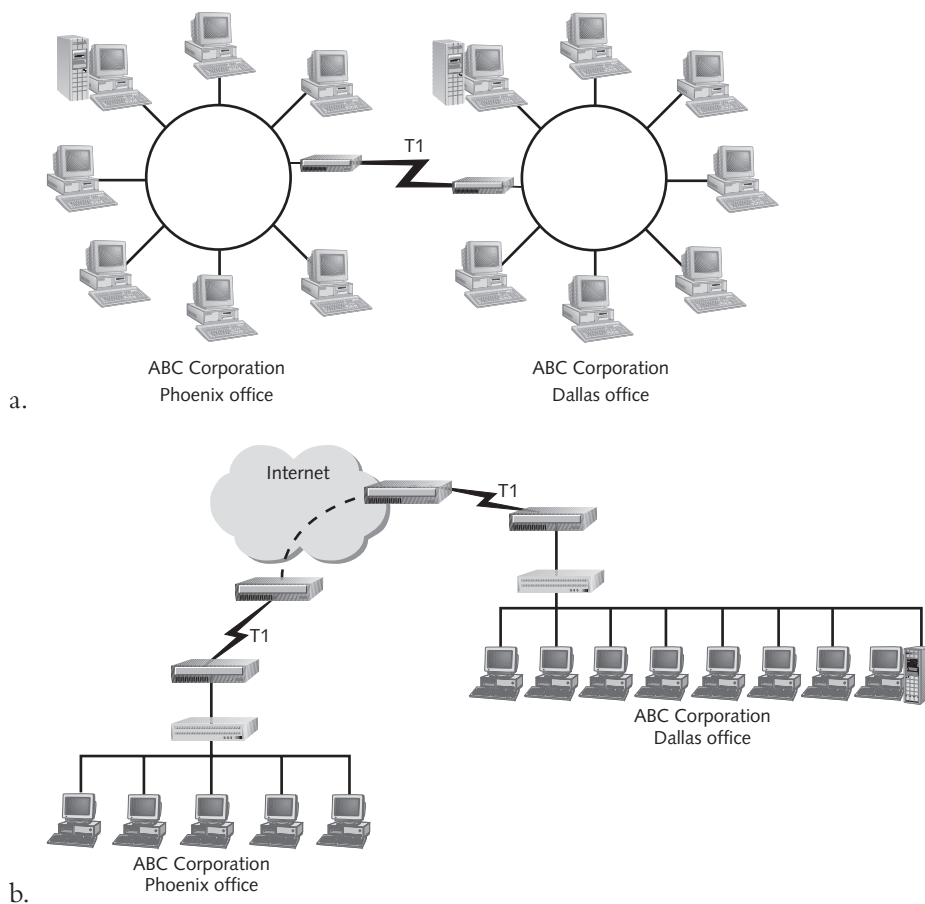
24. What type of device is typically used to create a VLAN?
- a. hub
  - b. bridge
  - c. switch
  - d. router
  - e. firewall
25. You are a support technician for a 10/100BaseT Ethernet network. A user has complained that she can only log on to the network about 25% of the times she tries. A few months ago, this problem was only happening once a week. You look at the hub port to which her workstation is connected, and you can tell that her workstation's NIC is experiencing a high number of collisions. What led you to this conclusion?
- a. The workstation's hub port's LED was solid green.
  - b. The workstation's hub port's LED was blinking green.
  - c. The workstation's hub port's LED was solid amber.
  - d. The workstation's hub port's LED was blinking amber.
  - e. The workstation's hub port's LED was not lit.
26. What is one of the main purposes of a proxy server?
- a. to mask the IP addresses for a group of Internet users within an organization
  - b. to allow employees traveling across the country to remotely log onto the LAN
  - c. to filter incoming packets and guard against IP spoofing and denial of service attacks
  - d. to subdivide a LAN into smaller groups of users (in other words, to create a smaller LAN within a LAN)
  - e. to encrypt data transmissions between private and public networks
27. What is a critical difference between network attached storage (NAS) and RAID?
- a. NAS is specific to one particular NOS, while RAID can be used with any file server, independent of the NOS it runs.
  - b. NAS uses its own network interface and file system, while RAID relies on a file server to connect to the network and manage files.
  - c. NAS relies on a mesh topology, while RAID connects to the network in a star configuration.
  - d. NAS must be shut down in order to replace a faulty disk or interface, while RAID arrays can be expanded without any interruption in service.
  - e. NAS exists as a distinct storage network, separate from the LAN, while RAID is part of the LAN.

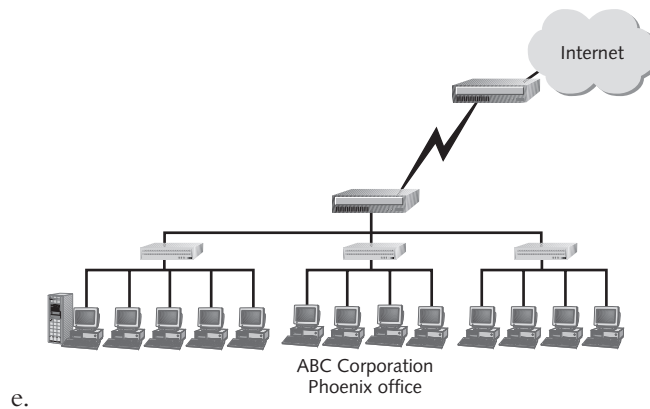
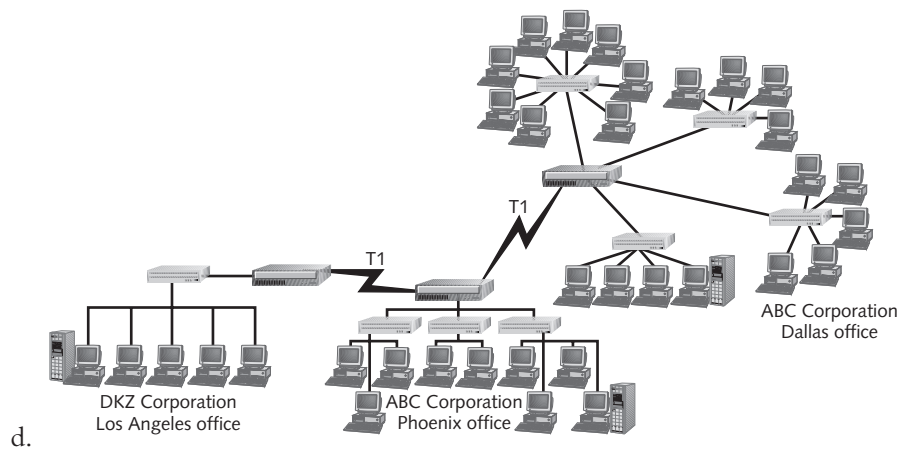
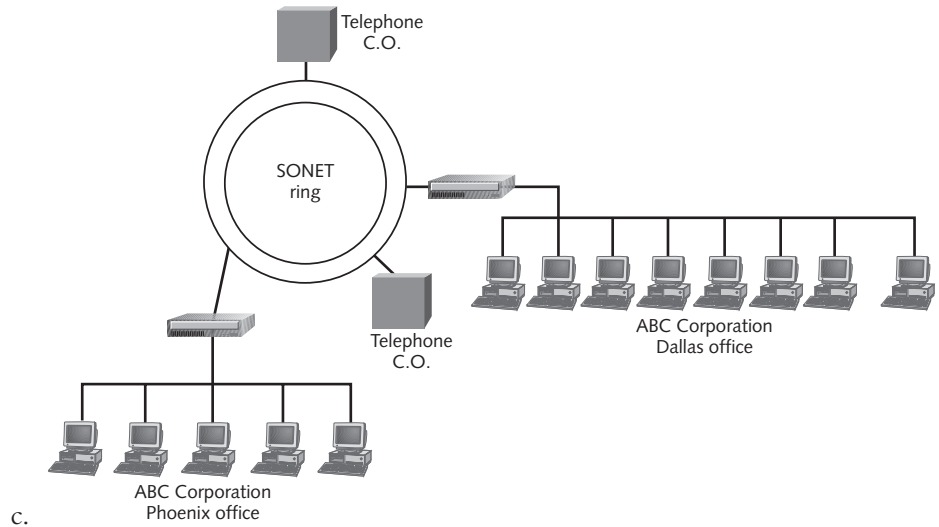
28. What type of network uses the connector shown in the figure below?



- a. 10Base2
- b. 10Base5
- c. 10BaseT
- d. 100BaseTX
- e. 100BaseFX

29. Which of the following figures illustrates a VPN WAN?





30. If you have an AUI cable connected to your workstation's NIC, and you need to connect this workstation to your Thicknet network, what would you connect the cable's opposite end to?
- a. MAU
  - b. hub
  - c. BNC T-connector
  - d. transceiver
  - e. LAM
31. What security measure ensures that your user name and password are contained in the NOS directory when you attempt to log onto a server?
- a. remapping
  - b. obfuscation
  - c. authentication
  - d. caching
  - e. redirection
32. You are a network administrator for a WAN that connects two regional insurance company offices—one main office and one satellite office—to each other by a T1. The main office is also connected to the Internet using a T1. This T1 provides Internet access for both offices. To ensure that your private network is not compromised by unauthorized access through the Internet connection, you install a firewall between the main office and the Internet. Shortly thereafter, users in your satellite office complain that they cannot access the file server in the main office, but users in the main office can still access the Internet. What two things should you check?
- a. whether the firewall has been configured to run in promiscuous mode
  - b. whether the firewall is placed in the appropriate location on the network
  - c. whether the firewall has been configured to allow access from IP addresses in the satellite office
  - d. whether the firewall has been configured to receive and transmit UDP-based packets
  - e. whether the firewall has been configured to allow Internet access over the main office's T1
33. What TCP/IP utility was used to generate the following output, and what piece of information does it tell you about the machine on which the utility shown below was used?

```

Windows 2000 IP Configuration

Host Name . . . . . : STUDENT1
Primary DNS Suffix . . . . . :
Node Type . . . . . : Broadcast
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix  :
Description . . . . . : Winbond W89C940 PCI Ethernet Adapter
Physical Address. . . . . : 00-20-78-12-77-84
DHCP Enabled. . . . . : No
IP address. . . . . : 203.188.65.109
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 203.188.65.1
DNS Servers . . . . . : 144.32.92.48

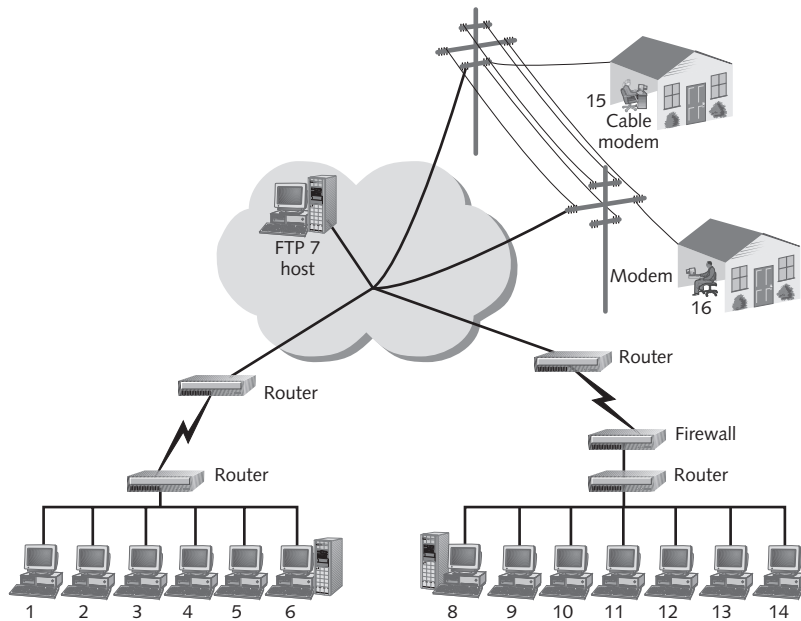
C:\>

```

- a. ipconfig; the output indicates that the machine has a MAC address of 002078127704
  - b. PING; the output indicates that the machine cannot communicate with any external hosts
  - c. ARP; the output indicates that the machine resolves to a name of STUDENT1
  - d. winipcfg; the output indicates that the machine does not rely on DHCP
  - e. nbtstat; the output indicates that it is currently connected to the machine with a NetBIOS name of STUDENT1
34. While troubleshooting a workstation connectivity problem, you type the following command: `ping 127.0.0.1`. The response you get indicates that the test failed. What can you determine about that workstation?
- a. Its network cable is faulty or not connected to the wall jack.
  - b. Its TCP/IP protocol is not installed properly.
  - c. Its IP address has been prevented from transmitting data past the default gateway.
  - d. Its DHCP settings are incorrect.
  - e. Its DNS name server specification is incorrect.
35. You are a support technician working in a telecommunications closet in a remote office. You suspect that a connectivity problem is related to a broken RJ-45 plug on a patch cable that connects a hub's uplink port to a router. You need to replace that connection, but you have forgotten to bring an extra patch cable. You decide to install a new RJ-45 connector to replace the broken RJ-45 connector. What two tools should you have in order to successfully accomplish this?
- a. punch-down tool
  - b. crimping tool
  - c. wire stripper
  - d. cable tester
  - e. multimeter

36. In the IP version 6 addressing scheme, which of the following IP addresses equals the loopback address?
- a. 1.0.0.1
  - b. 127:0:0:0:0:0:1
  - c. 0.0.0.0.0.0.0.1
  - d. ::1
  - e. 127.0.0.1
37. Which two of the following devices operate only at the Physical layer of the OSI model?
- a. hub
  - b. switch
  - c. router
  - d. bridge
  - e. repeater
38. What is the primary purpose for subnetting?
- a. to facilitate easier migration from IPv4 to IPv6 addressing
  - b. to enable a network to use DHCP
  - c. to make more efficient use of limited numbers of legitimate IP addresses
  - d. to reduce the likelihood for user error when modifying TCP/IP properties
  - e. to limit the number of addresses that can be assigned to one network interface
39. In which two of the following switching techniques must multiple data packets that make up the same transmission use identical paths to reach their destination?
- a. circuit switching
  - b. layer 2 switching
  - c. packet switching
  - d. message switching
  - e. layer 3 switching
40. What is unique about ATM transmission, as compared with Ethernet and Token Ring?
- a. ATM does not require CSMA/CD, making it more efficient.
  - b. ATM uses a fixed packet size, making it more efficient.

- c. ATM can run over SONET, making it more reliable.
  - d. ATM allows data to travel in both directions over a connection, making it more fault-tolerant.
  - e. ATM has longer network length limits, making it more economical.
41. In the network diagram shown below, which network nodes belong to a private network?



- a. nodes 1 through 6 and nodes 8 through 14
  - b. nodes 1 through 6
  - c. nodes 8 through 14
  - d. nodes 1 through 7, plus 15 and 16
  - e. all of the nodes
42. You are the network administrator for a law firm whose two primary offices are located five blocks apart in the center of a large city. The two offices have different specialties, and therefore keep separate file servers. Each file server runs the Windows 2000 Server NOS. A T1 connects the two offices so employees at each office can communicate and share files. In order to protect the lawyer's records, you currently make regular backups of all the data on both file servers and store the backup tapes in an off-site warehouse. However, one of the firm's partners has asked you to do more than simply

back up data. In addition, she requests that you implement this added measure within the next week. Which of the following solutions is the best choice to ensure greater data protection in the given time frame?

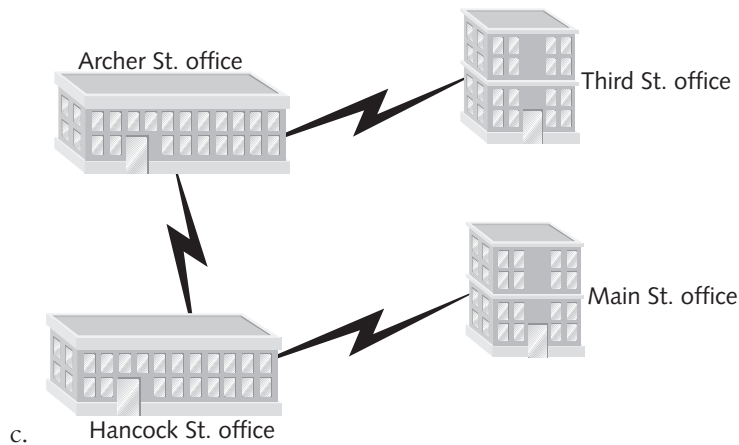
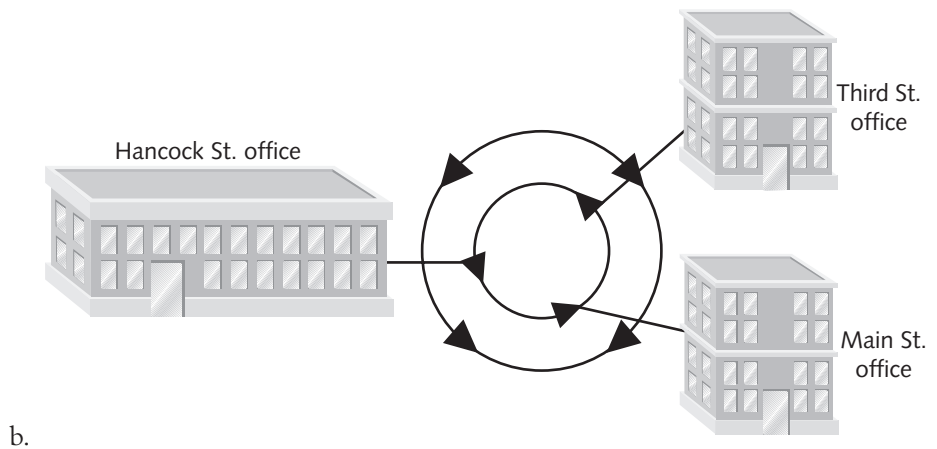
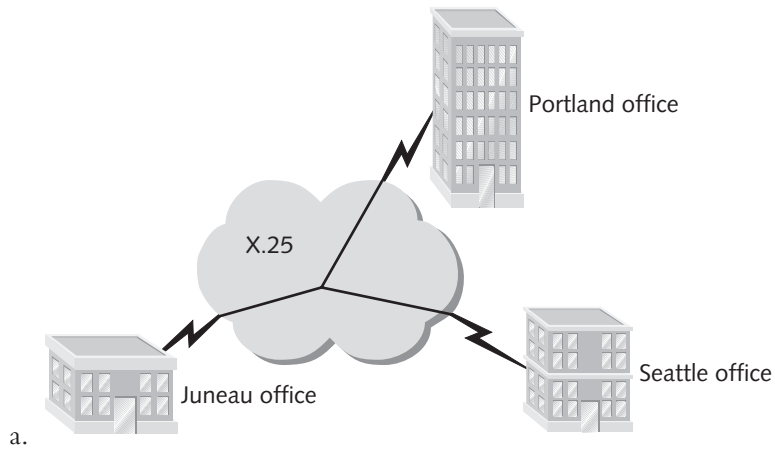
- a. contract with an online backup provider to back up data over the Internet using the T1
  - b. upgrade your version of Windows 2000 Server to Windows 2000 Advanced Server so that you can implement clustering
  - c. establish mirroring between the two servers using the T1
  - d. add a RAID 5 device to one of the file servers
  - e. connect the T1 to a third office across town and backup files from the two other locations to the third location
43. By default, an IPX address contains what other type of address?
- a. IP address
  - b. SPX address
  - c. MAC address
  - d. Logical address
  - e. NetBIOS address
44. Which transport protocol and TCP/IP port does the Telnet utility use?
- a. UDP, port 23
  - b. TCP, port 21
  - c. UDP, port 22
  - d. TCP, port 23
  - e. UDP, port 21
45. Which two of the following will guarantee that a server continually has power, even if a building's electrical service is interrupted?
- a. RAID 3
  - b. RAID 5
  - c. online UPS
  - d. NAS
  - e. diesel-powered generator
46. What protocol is used to transfer mail between two UNIX mail servers?
- a. SMTP
  - b. SNMP

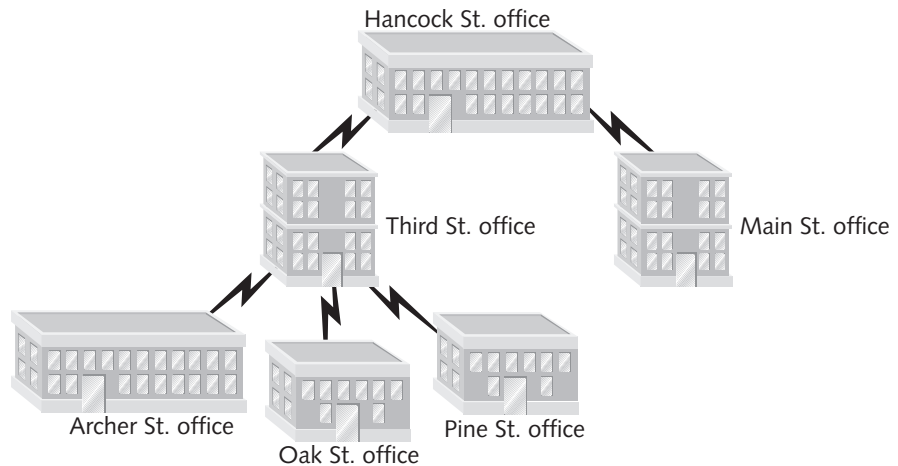


- c. IMAP
  - d. POP3
  - e. TFTP
47. What type of fiber-optic cabling is most likely to be used for a LAN backbone?
- a. single-mode fiber
  - b. dual-mode fiber
  - c. duplex fiber
  - d. half duplex fiber
  - e. multimode fiber
48. Which two of the following technologies use two pairs of twisted-pair wiring?
- a. 10Base2
  - b. 10Base5
  - c. 10BaseT
  - d. 100BaseTX
  - e. 100BaseT4
49. You are a support technician at an organization that uses a NetWare 5.11 LAN with a mixture of Windows 98 and Windows 2000 workstations. You are asked to help a user in the Accounting Department who can retrieve files from the network, but suddenly can't print to the same printer he uses every day. You have determined that he is the only person in his area affected by this problem. Further, if you log onto the LAN with his user name and password, you can successfully print to the same printer. Which of the following might be the cause of this user's problem?
- a. He has inadvertently deleted the network printer object from his workstation's Printers window.
  - b. His network password has expired.
  - c. His user name has accidentally been deleted from the group that has rights to print to that printer.
  - d. His workstation's client software configuration is missing the print server specification.
  - e. His network adapter is loose or improperly installed.

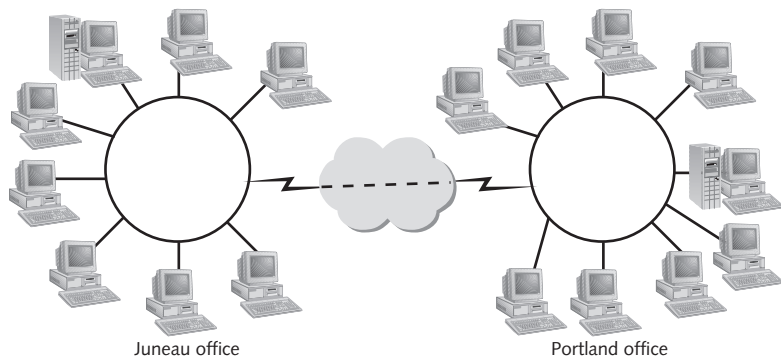
50. What is the function of the Network layer of the OSI Model?
- a. to manage the flow of communications over a channel
  - b. to add segmentation and assembly information
  - c. to encode and encrypt data
  - d. to add logical addresses and properly route data
  - e. to apply electrical pulses to the wire
51. Which of the following utilities would you use to log onto a UNIX host?
- a. NTP
  - b. ARP
  - c. PING
  - d. Telnet
  - e. SNMP
52. You are a networking consultant helping a local TV station establish a video broadcast Web server. The station has unlimited funding to broadcast their news and feature stories over the Web. However, they currently only have a DSL connection to an ISP. This DSL connection is used to provide Internet and e-mail access to their employees. Which two of the following solutions would be good choices for the TV station to broadcast programs to the Web from their station?
- a. a SONET ring that links the local station with an Internet service provider and uses ATM for transmitting video broadcasts over the Internet
  - b. a satellite uplink to a Webcasting service provider
  - c. a VPN that uses the Internet and transmits video broadcasts via IPSec
  - d. a fractional T1 connection to a local Internet service provider
  - e. a T1 connection to the station's national broadcasting affiliate that uses ATM for transmitting video broadcasts
53. What is the default subnet mask for the following IP address: 193.13.44.87?
- a. 255.255.255.255
  - b. 255.255.255.0
  - c. 255.255.0.0
  - d. 255.0.0.0
  - e. 0.0.0.0

54. Which of the following diagrams illustrates a FDDI network?

**B**



d.



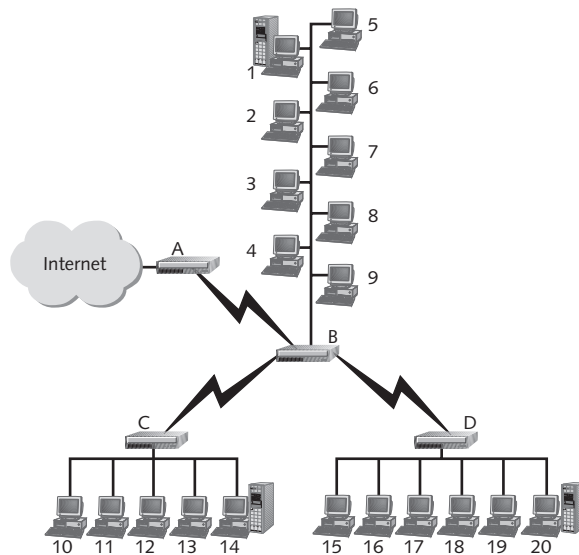
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55. You are a support technician installing 13 new Windows 2000 Professional workstations on your company's network, which relies on several Windows 2000 Servers for authentication and file sharing, one UNIX e-mail server, and one UNIX proxy server. The network runs the TCP/IP protocol over 100BaseTX Ethernet technology. It also uses DHCP and NAT. Which two of the following settings must you make sure to specify on each workstation so that their users can pick up their Internet e-mail from the UNIX e-mail server.
- Windows domain name
  - IP address
  - WINS server
  - NNTP server
  - SMTP server

56. Which of the following IEEE committees designs standards for Token Ring networks?
- a. 802.3
  - b. 802.3au
  - c. 802.3z
  - d. 802.5
  - e. 802.11
57. You are a network administrator for a LAN that includes three NetWare 5.11 file servers and 235 users. You are installing a new application on one of the file servers. This application must be accessible to 50 of the users, but not to all users. What tool would you use to create a group of users that has permission to access and run this application?
- a. NWAdmin
  - b. NDS Manager
  - c. NDSconfig
  - d. NDS eDirectory
  - e. MMC
58. What is the name of the file on a UNIX server that contains a list of host names and the IP address associated with each name?
- a. net\_host
  - b. hosts
  - c. hostid
  - d. lmhosts
  - e. hostnames
59. What types of files does an incremental backup save?
- a. data that changed prior to the previous backup
  - b. data that changed since the previous backup
  - c. all data, regardless of whether it has changed
  - d. data that were backed up exactly a week previously
  - e. data that users have flagged for backup since the last backup occurred

60. What software will enable Windows 2000 domains to appear as container objects within a NetWare NDS tree?
- a. Gateway services for NetWare
  - b. NDS eDirectory
  - c. NWAdmin
  - d. Client services for NetWare
  - e. IPX/SPX-compatible Services
61. You are a support technician installing a new NIC on a Windows 98 workstation. After physically installing the NIC, then installing the appropriate device driver for the NIC, you restart the workstation. Upon restarting, an error indicates that the NIC is attempting to use an IRQ already in use by another device. The workstation's Device Manager window indicates that both the NIC and the sound card are attempting to use IRQ 11. Of the following IRQs, which one could you most likely assign to the new NIC so that it will not conflict with another device?
- a. 4
  - b. 6
  - c. 9
  - d. 12
  - e. 13
62. Which three of the following components must be installed on a Windows 2000 Professional workstation in order for it to successfully connect to a Windows 2000 file server over the network?
- a. NIC
  - b. Client for Microsoft Networks
  - c. file sharing services
  - d. protocol(s)
  - e. Microsoft Family Logon
63. Which one of the following media is most resistant to EMI/RFI?
- a. coaxial cable
  - b. UTP cable
  - c. STP cable
  - d. fiber-optic cable
  - e. microwaves

64. In the following figure, if router B suffers a failure, what will be the effect of this failure on nodes 1 through 9?



- They will only be unable to access the Internet.
  - They will be unable to access the Internet and either nodes 9 through 14 or 15 through 20.
  - They will be unable to access the Internet, other nodes on the WAN, and other nodes on the LAN.
  - They will be unable to access the Internet and nodes 10 through 20.
  - Their connectivity will not be affected.
65. What command would you use to view the online help for the chmod utility on a UNIX server?
- man chmod
  - chmod help
  - help chmod
  - chmod /q
  - chmod list

